What is claimed is:

1. A method for detecting the presence of a single target nucleic acid molecule in a sample, said method comprising:

providing a sample containing at least one target nucleic acid molecule to be amplified and constituents for enabling amplification of the target nucleic acid molecule;

loading the sample into a sample chamber, said sample chamber including a device for retaining a reaction product of amplification of a single target nucleic acid molecule of said sample such that a reaction product of the amplification of the single target nucleic acid molecule attains a detectable concentration within a portion of said sample chamber after a single round of amplification when subjected to a homogeneous amplification assay;

subjecting the sample in said sample chamber to a homogeneous amplification assay including a single round of amplification under conditions such that amplification of said at least one target nucleic acid molecule occurs and the reaction product of the amplification of a single target nucleic acid molecule of said sample attains a detectable concentration within said portion of said sample chamber after said single round of amplification; and

detecting the reaction product of said single target nucleic acid molecule after said single round of amplification.

2. A method for detecting the presence of a single target nucleic acid molecule in a sample, said method comprising:

providing a sample containing at least one target nucleic acid molecule to be amplified and constituents for enabling amplification of the target nucleic acid molecule;

loading the sample into a sample chamber, said sample chamber including means for retaining a reaction product of amplification of a single target nucleic acid molecule of said sample such that a reaction product of the amplification of the single target nucleic acid molecule attains a detectable concentration within a portion of said sample chamber after a single round of amplification when subjected to a homogeneous amplification assay;

subjecting the sample to a homogeneous amplification assay including a single round of amplification under conditions such that amplification of said at least one target nucleic acid molecule occurs and the reaction product of the amplification of a single target nucleic acid molecule of said sample attains a detectable concentration within said portion of said

sample chamber after said single round of amplification; and

detecting the reaction product of said single target nucleic acid molecule after said single round of amplification.

3. A method for detecting the presence of a single target nucleic acid molecule in a sample, said method comprising:

loading a sample into a sample chamber, said sample comprising constituents for enabling amplification of a target nucleic acid molecule, said sample chamber including a device for retaining a reaction product of amplification of a single target nucleic acid molecule of said sample such that a reaction product of the amplification of the single target nucleic acid molecule attains a detectable concentration within a portion of said sample chamber after a single round of amplification when subjected to a homogeneous amplification assay;

subjecting the sample in said sample chamber to a homogeneous amplification assay including a single round of amplification under conditions such that amplification of said at least one target nucleic acid molecule occurs and the reaction product of the amplification of a single target nucleic acid molecule of said sample attains a detectable concentration within said portion of said sample chamber after said single round of amplification; and

detecting the reaction product of said single target nucleic acid molecule after said single round of amplification.

4. A method for detecting the presence of a single target nucleic acid molecule in a sample, said method comprising:

loading a sample into a sample chamber, said sample comprising constituents for enabling amplification of a target nucleic acid molecule, said sample chamber including means for retaining a reaction product of amplification of a single target nucleic acid molecule of said sample such that a reaction product of the amplification of the single target nucleic acid molecule attains a detectable concentration within a portion of said sample chamber after a single round of amplification when subjected to a homogeneous amplification assay;

subjecting the sample to a homogeneous amplification assay including a single round of amplification under conditions such that amplification of said at least one target nucleic

acid molecule occurs and the reaction product of the amplification of a single target nucleic acid molecule of said sample attains a detectable concentration within said portion of said sample chamber after said single round of amplification; and

detecting the reaction product of said single target nucleic acid molecule after said single round of amplification.